

Call for Papers

IEEE Open Journal of Systems Engineering **Special Issue on System Engineering Processes for Predictive Maintenance of Electrical Machines through Internet of Things**

Industrial machines and components are used under different environmental and working conditions in various sensitive applications such as electrical vehicles, traction systems, offshore wind turbines, and renewable power generation systems. Nevertheless, condition monitoring, predictive maintenance, and reliable control of machine parameters over a distributed network are critical challenges to be taken into consideration. The existing predictive maintenance systems developed based on systems engineering from the needs, definitions and desires obtained from the stakeholders until a logical architecture is a potential solution. Besides, Internet of Things (IoT) technology could be utilized to provide an essential and yet flexible platform to facilitate the requirement of controlling and monitoring such systems.

The developments in IoT, cyber-physical systems, signal processing and Artificial Intelligence (AI), on one hand, and the advances in model-based system engineering, digital thread, and validation/verification/testing, on the other hand, can be integrated to enhance predictive maintenance of electrical machines. However, this has not been explored by the researchers in these fields. These obvious gaps motivated us to propose a special issue to attract high quality research papers and make the readers aware of significant applications of IoT in these areas.

Key Topic Areas

This special issue aims to bring together researchers in the fields of system engineering, IoT, advanced signal processing, machine learning, and AI, to present novel ideas around systematic predictive maintenance, condition monitoring, etc. The topic of interest includes but not limited to: System engineering approaches for predictive maintenance; System engineering and industrial IoT; Requirement's elicitation in remote predictive maintenance; Needs and desire analysis for IoT-based predictive maintenance; Systematic cyber-security analysis in industrial IoT; Machine learning for predictive maintenance in complex systems; Signal processing for systematic condition monitoring; Cyber-physical systems for electrical machines; Data pre-processing and compression for remote condition monitoring; Digital thread in IoT-based condition monitoring of electrical machines; Integration of diagnostics and cyber-security systems; Logical architectures in remote predictive maintenance for electrical machines

For information on paper submission, prospective authors should visit <http://ieeaeess.org/OJSE>. Manuscripts should be submitted using the manuscript submission web site for IEEE Open Journal of Systems Engineering at <https://ieeaeess.com/journal/ojse> for peer review. Publication costs are \$975 (USD) for a 10-page manuscript.

Important Dates

- Manuscript submission deadline: 01 September 2023
- First review completed: 01 November 2023
- Revised manuscript due: 01 December 2023
- Second review completed: 15 January 2024
- Final manuscript due: 15 February 2024

Guest Editors

Vahid Abolghasemi¹, Mohammad Hoseintabar Marzabali², Mohammad Hossein Anisi¹, Shahin Hedayati Kia³, Lei Shu⁴
¹School of Computer Science and Electronic Engineering, University of Essex, UK, ²Shahrood University of technology, IRAN, ³Laboratoire MIS, Universite de Picardie, France, ⁴Nanjing Agricultural University, China / University of Lincoln, UK

v.abolghasemi@essex.ac.uk, m.hoseintabar@shahroodut.ac.ir, m.anisi@essex.ac.uk, shdkia@u-picardie.fr,
lei.shu@njau.edu.cn